

# Geometry 4<sup>th</sup> Nine Weeks: Scope and Sequence

Content Standards	Dates Taught	% of Students scoring over 70%	Dates Re-taught (Optional)	Formative and Summative Assessments/ (Any Additional Comments Optional)
<b>(11)</b> Prove theorems about parallelograms. <i>Theorems include opposite sides are congruent, opposite angles are congruent; the diagonals of a parallelogram bisect each other; and conversely, rectangles are parallelograms with congruent diagonals.</i> [G-CO11]	3/17-20	80%		Quiz on 8-1 – 8-4
<b>(18)</b> Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. [G-SRT5]				
<b>(23)</b> (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces). [G-SRT11]				
<b>(30)</b> Use coordinates to prove simple geometric theorems algebraically. [G-GPE4]				
<b>(4)</b> Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. [G-CO4]				
<b>(5)</b> Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another. [G-CO5]				
<b>(2)</b> Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). [G-CO2]				
<b>(3)</b> Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. [G-CO3]				
<b>(14)</b> Verify experimentally the properties of dilations given by a center and a scale factor. [G-SRT1]				
<b>(15)</b> Given two figures, use the definition of similarity transformations to decide if they are similar; explain using transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding sides. [G-SRT2]				

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<b>(25)</b> Identify and describe <i>relationships</i> among inscribed angles, radii, and chords. <i>Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</i> [G-C2]				
<b>(27)</b> (+) Construct a tangent line from a point outside a given circle to the circle. [G-C4]				
<b>(1)</b> Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment based on the undefined notions of point, line, distance along a line, and distance around a circular arc. [G-CO1]				
<b>(26)</b> Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. [G-C3]				
<b>(28)</b> Derive, using similarity, the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. [G-C5]				
<b>(29)</b> Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. [G-GPE1]				
<b>(13)</b> Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. [G-CO13]				
<b>(35)</b> Give an informal argument for the formulas for the circumference of a circle; area of a circle; and volume of a cylinder, pyramid, and cone. <i>Use dissection arguments, Cavalieri's principle, and informal limit arguments.</i> [G-GMD1]				
<b>(38)</b> Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. [G-GMD4]				
<b>(36)</b> Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.* [G-GMD3]				
<b>(41)</b> Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost, working with typographic grid systems based on ratios).* [G-MG3]				
<b>(42)</b> (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). [S-MD6]				
<b>(43)</b> (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). [S-MD7]				